

Southern California Edison's Title 20 Efforts

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2008 Rulemaking on Appliance
Efficiency
Regulations
Docket No. 07-AAER-3



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Outline

- Past, current, and future projects will be discussed relating to:
 - AB 1109 (Huffman Bill)
 - Preemption
 - Other
- Involvement with Federal standards discussed if applicable to project



Completed Projects Related to AB 1109

- Neon Scoping Study**
- Low Ambient with Task Lighting, Including Occupant Control of Ambient Lights
- Fluorescent Sign Lamp Efficacy/Lamp Spacing/Optical Efficiency Improvements**
- Title 24 Projects with Title 20 Implications
 - Field Test of Ambient/Task lighting**
 - Daylighting Metrics Study (phase 1)



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** Indicates a collaborative effort between IOUs

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AB 1109 Related Current Projects

- Dimming Ballasts/Controllable Lighting (Demand Response)**
 - Market potential study
- Super CFL (Statewide)**
- Title 24 Projects
 - Lighting Density Basis Study
 - Daylighting Metrics Study (phase 2)



AB 1109 Related Future Projects

- Portable Lighting for Office Applications, Including Task Lighting
- Neon Lighting Systems**
- Ceiling Fan Lighting Kits
- Landscape Lighting Kits
- Lighting Options for Vending Machines/Beverage Coolers
- Directional Lighting (scoping)



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AB 1109 Related Future Projects (cont'd)

- Lighting Controls (scoping)
- LED Open Signs
- Track Lighting Kits
- Communicating/Addressable Ballasts/Luminaires**
- Luminaire Efficacy (scoping)
- Explore Regulation of Incandescent Lights (non-“A” lamps)



Technologies Subject to Pre-emption



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Completed Project Concerning Preemption

- Vending Machines
 - Background
 - T20 currently uses Energy Star Tier 1
 - Energy Star Tier 2 in effect July 1, 2007
 - SCE contributed to DOE's Federal standard – energy consumption levels not yet established
 - Effective August 8, 2012
 - Projects
 - Closed Front
 - Glass Front



Current Projects Concerning Preemption

- Display Case Performance Standards
 - Background
 - SCE contributed to DOE's Federal standards, effective 2012
 - Not feasible for CEC to create standard before pre-emption
 - Project
 - CASE Study documenting SCE's involvement in developing federal standards
- Multi-Zonal Heat Pump (scoping)



Walk-Ins

- Background

- SCE worked with ACEEE and ARI to draft Federal legislation passed in December 2007 (<3,000 sf)
- Starting 2008, prescriptive based on T20
- Starting 2012, performance-based
- Leaves window open for CA to adopt more stringent standards before 2011



Walk-Ins Standards Comparison

	CA Title 20	Proposed Federal Language
Application	All	Less than 3000 sq ft
Automatic door closers	All reach-in doors Main doors: <4' wide or <7' tall	Main doors up to 3'9" x 7'
Infiltration barriers		Strip doors or spring hinged doors
Insulation	Cooler insulation R-28 Freezer insulation R-36	Cooler insulation R-25 Freezer insulation R-32 Freezer floor insulation R-28
Motors	Evap fan motors: ECM or PSC until 1/1/08, then only ECM Cond fan motors: ECM, PSC, or 3-phase, or equivalent	Evap fan motors: ECM (or equivalent) or 3-phase Cond fan motors: ECM, PSC, or 3-phase
Lighting		>40 Lumen/watt • Or, if not, must be on occupancy timer
Glass	Reach-in doors – Triple pane with heat reflective treated glass or gas fill	Freezers – Triple pane with heat reflective treated glass or gas fill. Coolers – Windows in walk-in doors either: • Double pane with heat reflective treated glass or gas fill. • Triple pane with heat reflective treated glass or gas fill.
Glass ASH	If no ASH controls: • Freezer ASH <40 W/ft of door width • Cooler ASH <17 W/ft of door width If ASH controls and higher power than above, must have use humidity-based controls.	If no ASH controls: • Freezer ASH <7.1 W/sq ft • Cooler ASH <3.0 W/sq ft If ASH controls and higher power than above, must have use humidity-based controls.



Future Walk-In Project 1

- Infiltration Barriers in Walk-Ins
 - Determine effectiveness and energy and power impacts of strip curtains, spring hinged doors, door gaskets, and air curtains
 - Not in current T20
 - Federal rules incorporate only strip doors and spring hinged doors

Speculated Start/Finish Dates: 2008/2009



Future Walk-In Project 2

- Variable Speed Evaporator Fans for Walk-Ins
 - Evaluate energy and demand impacts of different control algorithms and energy savings over traditional single-speed fans

Speculated Start/Finish Dates: 2009/2009



Future Walk-In Project 3

- Defrost Controls for Walk-Ins
 - Compare the performance and energy impacts of different defrost methods and control strategies including:
 - Hot gas vs. electric
 - Time vs. temp termination
 - Smart defrost controllers

Speculated Start/Finish Dates: 2010/2011



Future Walk-In Project 4

- Anti-Sweat Heater (ASH) Controls for Walk-Ins
 - Determine the energy and demand effects of requiring mandatory ASH controls for low temp reach-ins and all solid doors, med and low temp

Speculated Start/Finish Dates: 2010/2011



Future Walk-In Project 5

- Walk-In Construction
 - Perform whitepaper study of various options for walk-in structural make up to achieve most cost-effective thermal performance
 - Investigate:
 - Panel design
 - Assembly practices
 - Materials

Speculated Start/Finish Dates: 2008/2008



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Future Walk-In Project 6

- Walk-In Lighting Requirements
 - Develop standard lighting requirement for interior walk-in spaces
 - Potentially address:
 - Fixture efficacy
 - Occupancy sensors
 - Lighting wattage density

Speculated Start/Finish Dates: 2008/2008



Future Walk-In Project 7

- Benchmarking of Simulation Models
 - Perform laboratory testing
 - Determine validity of simulation models using our test data

Speculated Start/Finish Dates: 2009/2009



Future Walk-In Project 8

- Walk-In Freezer Floor Insulation
 - Change current T20 language to include requirements for insulation of low temp walk-ins
 - Included in Federal standards

Speculated Start/Finish Dates: 2008/2009



Other Current Projects

- Current Projects
 - Nugget Type Ice Machine Market Research and Testing (Possible Federal Work)
 - Spot Air Conditioner



Other Future Projects

- Intelligent Motor Controllers for Elevators & Escalators (scoping)
- Commercial Electric Dryers Energy Star for Office (and Retail) Equipment**
- Variable Air Volume (VAV) Lab Fume Hoods
- VAV Kitchen Exhaust
- Evaporative Cooling Rating Standards



Other Future Projects (cont'd)

- HVAC Automatic Fault Detection and Diagnostics (FDD)
- Air Cooled Direct Expansion (DX) Systems
- Multiple Shower Heads**
- Single Lever Water Faucets
- Cross-flow of Hot and Cold Water**



QUESTIONS ?



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Appendix: Code Language Concerning Walk-Ins

- § 6316. Administration, penalties, enforcement, and preemption
 - (3) Any standard issued in the state of California, before January 1, 2011, under Title 20 of the California Code of Regulations, which refers to walk-in coolers and freezers, for which standards have been established in paragraphs (1) and (2) of section 342(f), shall not be preempted until the **[2012 performance]** standards established in paragraph 3 of section 342(f) take effect.” **[in 2015]**

